

NASA technology helps industrial leaders build facilities

Virtual reality software, originally developed by NASA engineers to help explore Mars, is being used now by a leading petrochemical company to build and plan operations for a complex industrial facility in 'virtual world' simulations.

The Mars Map virtual reality software, developed at Ames, guided scientists through the agency's very successful 1997 Mars Pathfinder mission. The tool allows mission scientists and operations personnel to command and control remote robotic spacecraft within a virtual environment. Recently, Reality Capture Technologies (RCT), Inc. of San José, Calif., was granted a license for further development of the platform. RCT now is deploying this productivity and life-cycle information-management tool at a new Shell Chemicals process plant currently under construction in Geismar, La.

"Our product, based on NASA technology, will allow Shell to create and validate start-up procedures, in addition to a construction-feasibility review, and commence training in a virtual environment months before the plant is fully built," said Reality Capture Technologies' Chief Executive Officer Dr. Ted Blackmon.

RCT's software enables engineers to simu-

late a plant environment in order to review its 'constructability,' a process of evaluating the design, scheduling, cost and resource planning to assess the possibility of implementing such a design. The software also allows engineers to create operating procedures, training and documentation. Similar to pilot training on flight simulators, this technology enables plant operators to get the training they need in a virtual environment.

"What makes this software even more unique is how simple it is," said Blackmon. "It is almost like a video game where you hold a joystick and walk around making sure that everything is working right. Only in this case, you walk around a not-yet-built Shell plant," he added.

By fusing software systems used during the design stage with those used during construction, the software provides virtual access to a construction site and permits project personnel to manage, assess, control and respond more effectively to changes in the plant's complex construction. Like space explorers who use Mars Map to learn how to get around the red planet, facility operators can use the new tool to learn how to better 'pilot' the sophisticated and expensive industrial-plant asset.

"Operators can now easily access and understand engineering information that is critical to operations, which makes their job much easier and safer," said Blackmon.

An Ames science team originally developed Mars Map to create a photographic-quality rendering system. Mars Map allowed researchers to better understand the surface of Mars and perform more effective science by providing an accurate visual representation of the planetary terrain.

"The Mars Pathfinder mission was the first test of this new class of photo-realistic, virtual-reality systems," said Dr. Michael Sims of Ames, who managed the Mars Map development team. "Mars Map made a big difference in our understanding of Mars during Pathfinder, and made us realize that this technology could be an extremely powerful tool for the rendering of the world."

"RCT uniquely addresses the link between various stages of a facility's life cycle, leveraging information generated during the design stage through construction and subsequently into operations and maintenance," said Blackmon. "By leveraging advanced software, originally developed at NASA for the space program, we are able to effectively 'bridge the islands of automation' that exist in the engineering/construction/operations industry today, and interconnect traditionally stand-alone software systems into an end-to-end distributed computing platform."

"This company is a resident of the Ames Technology Commercialization Center, a technology incubator located in San José," said Phil Herlth of the Ames Commercial Technology Office. "Their commercial partnership with a major chemical company is another example of a successful transfer of a space technology that is now benefiting people here on earth."

BY VICTORIA KUSHNIR

Astrobiology Science Conference set

Ames and the NASA Astrobiology Institute will host the second biennial Astrobiology Science Conference on April 7-11.

Over 400 preeminent international researchers will converge on Ames to discuss the rapidly emerging, interdisciplinary field of astrobiology--the search for the origin, evolution, distribution and future of life in the universe. The meeting will include over 50 invited talks and oral presentations and five days of poster sessions.

Teachers and members of the general public will be able to attend several free lectures about astrobiology. They also will have the chance to talk with astrobiology educators, gather teaching materials and participate in hands-on classroom activities.

For more information, visit: <http://web99.arc.nasa.gov/abscon2/>.

Venneri visits Ames



photo by Tom Trower

Sam Venneri, Associate Administrator for Aerospace Technology, NASA Headquarters, stopped by NASA Ames recently to tell an 'all hands' meeting of Administrator O'Keefe's vision of 'one NASA,' the importance of team work and the expectation that NASA Ames research will lead to the breakthroughs of the next century.

Editor's Note:

In line with the center newsletter publication policy at all NASA field centers and as a result of constrained discretionary budgets, the Astrogram will be published on a monthly schedule henceforth, effective immediately.

Center Briefs

Purdue team to help develop life-supporting ecosystem in space

NASA's Office of Biological and Physical Research recently selected Purdue University, West Lafayette, Ind., for a five-year grant totaling \$10 million to lead a NASA Specialized Center of Research and Training (NSCORT) for Advanced Life Support (ALS) that will develop technologies to enable long-duration planetary missions and sustain human space colonies.

This ALS NSCORT will consist of a consortium of institutions that includes Purdue and two historically black universities, Alabama A&M University in Normal, Ala., and Howard University in Washington, D.C. Scientists and engineers from all three institutions will work together to conduct research on a number of self-sustaining technologies required for long-duration space missions, including solid-waste processing, water recovery and air revitalization and food processing and food safety.

NASA selects advanced technology concept for test flight

NASA's New Millennium Program has selected two organizations to lead the work on sensor and thrust-producing technologies to control a space vehicle's flight path so the payload responds only to gravitational forces.

The disturbance reduction system technology is scheduled to fly in 2006 as the Space Technology 7 project. Space Technology 7 is designed to test and validate advanced technologies that have never flown for future use on NASA missions.

NASA funding for Space Technology 7 is \$62.6 million. The technology providers are Stanford University, Stanford, Calif., and Busek Company Inc., Natick, Mass.

NASA selects inventions of the year

A miniature pump, a ventricular-assist device (VAD), designed to help the heart beat and a device that ensures the safety of the International Space Station and its crew have recently received NASA's commercial and government 'invention of the year' awards.

Initially called the NASA/DeBakey heart pump, the VAD is based in part on technology used in space shuttle fuel pumps. It is intended as a long-term 'bridge' to a heart transplant, or as a more permanent device to help patients toward recovery and a more normal life.

The concept for the pump began with talks between Dr. Michael DeBakey of Houston's Baylor College of Medicine and one of his heart transplant patients, NASA engineer David Saucier. Saucier, who worked at NASA's Johnson Space Center in Houston, knew first-hand the urgency heart-failure patients feel waiting for a donor heart and was familiar with space shuttle technology Saucier subsequently passed away in 1996.

Herstedt honored for 60 years of federal service

Ames veteran Harold Herstedt, who joined NASA back in the days when it was known as the National Advisory Committee for Aeronautics (NACA), recently was honored for his 60 years of service with the federal government, including 44 years with NASA and 16

years in their endeavors reflect the spirit of America."

O'Keefe noted that, during NASA's formative years, Herstedt was the sole contracting officer in procurement responsible for the construction of many buildings at

Ames, including the life sciences facility, the administration support facility and the central computer facility.

"This is indeed a noteworthy anniversary and I am sure it is one in which you take great pride," O'Keefe wrote. "Your dedication and commitment to the Agency for these many years are truly commendable."

Herstedt, who turned 82 last September, graduated in 1941 from the University of California at Berkeley with a degree in



by Dominic Hart

Ames Center Director Dr. Henry McDonald (right) recently presented veteran Ames engineer Harold Herstedt (left) with letters of commendation from President George W. Bush and NASA Administrator Sean O'Keefe, a flight jacket and a 60-year service award.

years with NACA.

A general engineer who describes his work as a 'consultant' in the acquisition division, Code JA, Herstedt was honored March 1 at the senior management staff meeting. During a brief ceremony, Ames Center Director Dr. Henry McDonald presented Herstedt with letters of commendation from President George W. Bush and NASA Administrator Sean O'Keefe, a flight jacket and a 60-year service award.

"It's quite a pleasure to be here, to be anywhere, I guess," quipped Herstedt as he received his award from McDonald surrounded by numerous friends and associates.

"It's quite an accomplishment, and you are to be commended," said McDonald as he presented the awards to a beaming Herstedt.

In his letter to Herstedt, President Bush commended him for his 60 years of dedicated service with the federal government. "Your devotion serves as an example of hard work and leadership and is an inspiration to others," Bush wrote. "Committed individuals who set high goals and strive for excel-

mechanical engineering. He spent his early years at Ames helping build wind tunnels.

"There were only six buildings here when I arrived on Jan. 2, 1942, and we went on from there," Herstedt recalled. Herstedt helped build the 40-foot by 80-foot wind tunnel, the original 12-foot wind tunnel and also worked on the Unitary wind tunnel complex. He also remembers that Building N-204, that now houses the offices of Public Affairs and the Inspector General, originally was constructed as a low-density wind tunnel. "There's been lots of changes since then, but that's the way it goes," Herstedt said.

"It's been interesting watching the center grow over the years," Herstedt said. "I've had a lot of great experiences here, but probably what I'll remember the most are the good friendships I've made with the people I've worked with over the years."

A native of Moline, Ill., Herstedt never married. He said he enjoys gardening and reading in his spare time, and has no plans to retire.

BY MICHAEL MEWHINNEY

Ames veteran conducts 'research at the crossroads'

At the exposed and often lonely crossroads where disciplines meet, lie insights into new breakthroughs, and the promise of discovery, according to one veteran scientist.

Friedemann Freund fiddled with an overhead projector one sunny day in February. He was showing an attentive group of Foothill/De Anza interns a chart that compared the energy unleashed by earthquakes with the destructive power of the Hiroshima and Nagasaki atom bomb explosions. A scientist at several institutions including Ames, the SETI Institute and San José State University, Freund is at ease delivering complex ideas in a way that is intuitive and engaging. He reveals with a grin that what he loves best is the challenge to work along the boundaries where many disciplines interface.

Yet, Freund also is quick to point out the difficulties in receiving funding, and in communicating, when curiosity and intellect take you across the borders that have traditionally divided scientific disciplines.

"My white hair gives it away. I'm an old hand," says Freund, a native of Germany. He attended college in Geneva, in the French-speaking part of Switzerland, and received a bachelor's degree in chemistry and a doctorate in mineralogy from the University of

Marburg, Germany. In his 30-year career, he has had appointments at Stanford University; Cornell University; the Universities of Cologne, Göttingen, Namur and Paris; spanning the United States, Germany, Belgium and France. He is a member of the American Physical Society, the American Chemical Society, the American Geophysical Union and the International Society for the Study of the Origin of Life.

Freund developed an interest in solid state physics and crystallography early in his career. "At the university, I started out with chemistry, but was soon captured by the beauty of the colors seen in the microscope when you look at thin sections of minerals in polarized light," he recalled. "This propelled me into crystallography and mineralogy, into ceramics, too. For this, I came to the United States for the first time as a post-doc at the Pennsylvania State University."

Freund returned to Germany in 1962 to occupy a faculty position in chemistry at the University of Göttingen. He began studying proton conductivity, and found how a tiny fraction of protons can control a major solid state reaction that has played a "pivotal role in humanity's technological progress since the Stone Age: dehydration of clays, the



Friedemann Freund

raw materials for ceramics."

When asked what led him on this path, he said, "Curiosity for what is unseen and still unknown, is what compelled me to go into science."

Freund left Göttingen for a position in geosciences at the University of Cologne, Germany, where he stayed 15 years. He expanded his proton conductivity studies, and started to probe defects in crystals and how they affect a wide range of physical and chemical properties of minerals. "Eventually, I grew impatient with the constraints placed by tradition on interdisciplinary work in Germany," reflects Freund, in explaining his decision to return to the United States to join NASA's multidisciplinary effort to study the origin of life. "Looking back, I realize that I often followed my curiosity more voraciously than the rigors of a conventional career."

Freund joined Ames in 1985 as a senior fellow for the National Research Council. His work involved looking at the structurally densest minerals as an environment in which organic reactions can take place. A spin-off of this work led him to the discovery of dormant charges in minerals and rocks. Stress, such as it occurs when the Earth's outermost layers collide and rub against each other, causes these charges to appear and travel at great speed. When charges flow there is an electrical current, and associated with an electrical current there will be a magnetic field. From there he entered the burgeoning, still highly contentious, field of electric and electromagnetic phenomena related to earthquakes.

He described these phenomena to colleagues in the seismology section of the American Geophysical Union Fall 2001 meeting in San Francisco. His presentation dealt with how stress turns rocks into semiconductors, producing electric and electromagnetic signals. Such signals from deep within the Earth may one day provide a warning before large earthquakes. "The challenge is to learn how to read and to decipher these signals,"

continued on page 10

SILICON VALLEY ASTRONOMY LECTURE SERIES

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Earth Day 2002 at Ames

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Wednesday, April 17

Dr. Fritjof Capra, physicist, systems theorist and author of several international best sellers, including *The Tao of Physics* and *The Web of Life*

“Sustainability & Security”

12:00 p.m. - 1:30 p.m., N-201 Auditorium

Tuesday, April 23

Bird Hike at Ames, 9:00 a.m. - 10:30 a.m. and 3:00 p.m. - 4:30 p.m. (register online)

Street Fair on Durand Road (next to Ames Café)

11:00 a.m. - 2:00 p.m. (music, exhibitors, fun)

Wednesday, April 24

Darren Bouton, City of San José

‘Green Building Demystified’

12:00 p.m. - 1:30 p.m.; N-245 Auditorium

Thursday, April 25

Shannah Trout; Kennedy Space Center

‘Green Purchasing at Ames’

10:00 a.m. - 11:00 a.m.; N-239 Room 039

Exhibitors

Acterra, BAAQMD, City of San José Green Building Program, McSolar, ZAP Electric Bikes, Silicon Valley Bicycle Coalition, San Francisco Bay Trail, City of Sunnyvale, Code JFS (Supply/Store Stock, Motor Pool, Recycling, Ames Commute Alternative Program), Code JFP (Energy Conservation & Composting), Ames GLOBE, Code QE, Code SGE offices

For more information, visit the Environmental Services Office web site at: <http://q.arc.nasa.gov/qe/events/ED/ED2002/> Point of contact for the events is Julie Quanz at ext. 4-6810 or email at: jquanz@mail.arc.nasa.gov

Welcome to the board

On Feb. 27, Timothy Barth, a computer scientist in the NASA Advanced Supercomputing (NAS) Division's Physics and Simulation Modeling Office, was appointed to the editorial board of a book series published by prestigious international scientific publisher Springer-Verlag. Barth received his welcome from Martin Peters, senior mathematics editor for Springer. Established in 1997, this series, “Lecture Notes in Computational Science and Engineering,” is a part

of the publisher's mathematics division.

Barth has been a contributing author to two editions of the lecture series. The most recent, released in January, is devoted to the topic of multi-scale and multi-resolution methods. All editions are in some form related to computational science and engineering (CSE), which is the application of applied mathematics and computations.

“Springer is really into CSE—they are embracing this as a new subject area, even

though it's not a very focused subject. It's all applied mathematics with an emphasis on computations,” explained Barth.

Barth's duties on the editorial board include the approval of new books for the series, and providing input to the senior editor about possible new authors and new topic areas. For additional information about the computational science and engineering series, contact Tim Barth at e-mail: barth@nas.nasa.gov

BY HOLLY A. AMUNDSON 

Pioneer 10...still going after 30 years



Celebrating contact with Pioneer 10 are (left to right) Dave Lozier, Larry Lasher, Robert Hogan and Larry Kellogg all of Code SF, the Space Projects division. The late Charles F. Hall originated the Pioneer program in 1962 and was the sole project manager during the spacecraft's development and accomplishment of all of the scheduled mission activities.



photos by Tom Trower

Boeing utilizes NASA software

Boeing is currently using an array of NASA-developed software packages to analyze different designs of their Sonic Cruiser airplane, the NASA Overset CFD Software (which includes the Overflow flow solver), Chimera Grid Tools, and Pegasus5. As reported in the Feb. 11, 2002 issue of *Aviation Week and Space Technology* (page 47), Boeing has been making extensive use of computational fluid dynamics (CFD) to analyze the design of the airplane, reducing the amount of wind tunnel testing necessary.

Boeing plans to use only four high-speed wind tunnel testing sessions during the design of the Sonic Cruiser--two or three fewer sessions than would be required without the use of CFD. Fewer tests translates to significant savings of both time and money--a round of wind tunnel testing can take up to one year to complete. "This represents significant cost savings to Boeing's multi-billion dollar Sonic Cruiser aircraft design effort--it will also mean that the aircraft will be able to enter service much sooner," said Stuart Rogers, aerospace engineer and co-developer of Pegasus5, and the Chimera Grid Tools software, from the NASA Advanced Supercomputing (NAS) Division.

NASA Overset CFD software has been used to run hundreds of CFD calculations in the past year at Boeing. The high quality of the software, coupled with the automated CFD processes, make it possible to turn around design test results quickly and accurately. "We had a lot of confidence in the CFD and the first high-speed wind tunnel test results were very close to what CFD predicted," explained Walt Gillette, Boeing Sonic Cruiser program manager. If you have questions, or would like additional information about NASA Overset CFD software, contact Stuart Rogers at rogers@nas.nasa.gov.

BY HOLLY A. AMUNDSON

Disaster relief agencies at Ames



photo by Tom Trower

Bay Area emergency response personnel at the City of San José/Ames March 11 remembrance of 9/11 are (from left to right) Captain Chris Jones, Coast Guard, with the Department of Health and Human Services; Centella Tucker, FEMA disaster assistance employee; Lynne Engelbert, section chief of training for the NASA Ames Disaster Assistance and Rescue Team with her search dog Lucy; Shirley Hammond, canine search specialist with CA Task Force 3 (an urban search and rescue task force) with her search dog Sunny Boy; and Frannie Winslow, Director of Emergency Services for the City of San José.

VPP STAR Tip:

It is the federal OSHA purpose for the VPP to emphasize the importance of systematic management of occupational safety and health that has shaped what the VPP are and how they are used. That purpose was quietly revolutionary in 1982.

*....Margaret Richardson, in Preparing for the Voluntary Protection Programs
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Digital photos from solar airplane to improve coffee harvest

Thanks to recent NASA research, digital pictures taken from a remotely piloted, solar-powered airplane will help growers harvest better coffee and provide support during future natural disasters.

To test their aerial imaging system, researchers used remote control to take digital images of coffee fields on the Island of Kauai from a piloted, light plane. They provided these images to the harvest manager on the ground. By viewing the color patterns in the images, the manager could tell which fields were ripest, and where to send harvest machines. Choosing the fields with the highest percentage of ripe coffee cherries is crucial because harvest machines shake off all the coffee cherries in each field, whether they are ripe or not.

"There is a significant difference in the value of ripe coffee cherries compared to unripe and overripe cherries," said Stanley Herwitz, professor of Earth sciences at Clark University, Worcester, Mass, who now is based at Ames. Herwitz also is the principal investigator for the Uninhabited Aerial Vehicle (UAV) coffee project. "The main variety of coffee grown on this particular plantation, the largest in the U.S.A., ripens to a yellow color," he said. The color of coffee cherries, which contain coffee beans, indicates the degree of ripeness.

"Fields ripen very unpredictably and independently of each other," Herwitz said. "We can take very high-resolution pictures flying over the fields, locate the ripest fields and help the harvest manager decide where to send his harvest machines to obtain the most profitable harvest."

"The current method of determining field ripeness involves limited sampling of branches and counting ripe cherries versus unripe and overripe cherries," Herwitz said. "Our method provides a view of the entire plantation. For some pictures, we use filters to image only the wavelengths of interest. In that way, we can obtain imagery that emphasizes the yellow color of the ripest coffee fields," Herwitz said.

"The imagery provided us with a new perspective in our effort to detect ripe coffee fields," the harvest manager at the Kauai Coffee Company, a research partner, said. "We plan to continue to refer to this readily accessible imagery over the next several months as we conclude our harvest operation and focus our efforts on irrigation and weed control," he added during last year's post-harvest season.

Digital aerial images also can aid growers by showing the location of vines that can jam coffee-harvesting machines. In addition, one of the cameras takes digital pictures of infrared light, which is invisible to human beings. Scientists represent infrared light with visible, bright colors in pictures. This aerial infrared imagery helps researchers detect

fungal disease, water stress and insect infestation in many types of plants.

In the tropics, clouds and their shadows often pass over the fields, even on typically sunny days, preventing completely clear views in single aerial pictures. To overcome this problem during the 2002 Hawaiian coffee harvest, the research team will fly the Pathfinder Plus, a remote-controlled, solar-powered airplane, which can circle as long as 16 hours.

The unique 'loitering' ability of the airplane will enable it to acquire enough images so they can be assembled into a mosaic of cloudless imagery of the entire plantation. Eventually, designers hope to fly solar-powered UAV aircraft for weeks to months at a time without landing.

"Our immediate objective is to demonstrate the commercial potential of a solar UAV airplane to linger over fields for as long as it takes to acquire cloudless imagery, as well as watch the fields ripen during the 2002 Kauai harvest season," said Herwitz. Field ripeness can change dramatically in a few days, he said.

During the 2001 Hawaiian coffee harvest season, the research team tested the imaging systems they will use on the solar airplane for the 2002 harvest. Scientists on the ground used wireless technology to control their digital cameras on a piloted light aircraft and transmitted large, 20-megabyte images to their ground station in as little as 35 seconds. "We were in Kauai for three weeks, and we acquired more than 2,000 images," Herwitz said.

"Our long-term goal is to develop the imaging technology aboard solar-powered UAV airplanes to help people to cope with natural and other disasters, as well as to assist farmers who grow a wide variety of crops," said Herwitz.

"Corn and wheat are candidates for this kind of precision agriculture research because the scale of production is so huge," Herwitz said. "The goal is to help growers manage their fields at a high level of efficiency."

Real-time imaging can help those farmers who may need quick updates of ripeness conditions of crops or any other treatments such as fertilizers, irrigation and pest control."

Using their imaging system aboard the solar-powered airplane, the research team will obtain much higher resolution images than are available from satellites. "The solar-powered UAV will fly much closer to the Earth than orbiting satellites, and the result will be much sharper imagery. In the near future, the solar-powered UAV will be used for multitasking jobs such as precision agriculture, communications, weather observation, disaster monitoring and emergency response," Herwitz said. Another advantage of the solar airplane is that it can land, and scientists can easily upgrade the plane's sensors, unlike a satellite that stays in orbit.

The NASA UAV Science Demonstration Program is funding the \$3.76 million UAV Coffee Project, which includes a team of about 15 researchers. Scientists selected the project after reviewing more than 40 UAV science proposals.

The project is scheduled to run from June 2001 to June 2004. More information about the coffee project is on the internet at: <http://www.clarku.edu/faculty/herwitz> and at: <http://www.clarku.edu/research/access/geography/herwitz/herwitzD.shtml>

Publication size images are available at: <http://amesnews.arc.nasa.gov/releases/2002/02images/coffee/coffee.html>

BY JOHN BLUCK ▲

Stanford blood drive held at Ames



Stanford blood bank held a very successful blood drive at Ames in mid March. Shown here are some of the Ames employees at the drive which was held in Bldg. 3, the Moffett Training and Conference Center.

photo by Tom Trower

Annual export compliance training at Ames

Ames employees are invited to attend non-mandatory annual export compliance training on either April 22 or April 30, in Bldg. 3 from 1:30 to 3:30 p.m. each day.



The keynote speaker will be former ambassador to the Dominican Republic, Bob Pastorino, who now resides in San Francisco. He also made a similar presentation last year at Ames.

"At the embassy level, an ambassador is the main person who promotes trade on behalf of the United States, protects U.S. commercial interests and deals with security concerns," said Ames' center export administrator, Raj Shea, commenting on why Pastorino will make the keynote speeches.

Shea also will speak during the sessions. "Export rules affect NASA researchers who collaborate with many foreign nationals around the world. There is a potential that controlled technologies may inadvertently be transferred to foreign countries," he said. "We do this training on an annual basis, and, although it's not mandatory, it is highly recommended that Ames resident staff members attend annually to keep them updated on changes to the export compliance regulations," Shea said.

"We are holding this training to increase awareness of the NASA Export Compliance Program to researchers and project managers. You have to comply with export laws," he said. "The export compliance programs are designed to protect items and information important to the United States, and

export controls refer to government rules and regulations that govern the transfer of commodities, technologies and software codes to non-U.S. entities or individuals."

Ames' chief of protective services, Clint Herbert, will welcome speakers and attendees. Other people to speak include Ben Robinson and Rob Terwilliger, special agents from the San José Enforcement Office of the Bureau of Export Administration, who will talk about enforcement of export laws.

Additional presenters from Ames' Commercial Technology Office include Robin Orans, responsible for software release, and Rob Padilla, patent counsel. Vivian Torres from Ames' Logistics Branch is the transportation officer who is responsible for all the

imports and exports from Ames and will speak about her area of responsibility. Helmuth Pescador of the Ames Center Information Technology Security Office also will make a presentation. Linda Franklin, legal counsel, will speak about public domain issues.

Further information about export compliance can be found on the web at: <http://pso.arc.nasa.gov/export/index.html>

The Ames Export Compliance Office support staff also can assist Ames personnel. Contact Karol Broussard at ext. 4-1722 and Kimberley Wall at ext. 4-1786 for more information.

BY JOHN BLUCK 

Partners in safety



Photo by Tom Trower

Center Deputy Director Bill Berry (right) congratulates Marv 'Chris' Christensen, program manager (center) and John Livacich (left), environmental, health and safety manager, about the recent Lockheed Martin engineering and technical support contract safety award.

The Lockheed Martin engineering and technical support contract (ETSC) employs an average of over 300 people at any given time. The focus is on life science research that encompasses ground-based research and flight payloads on the shuttle, international space station and unmanned space vehicles. Recently, ETSC was honored not for what they have helped to build in space, but for the outstanding safety record they have constructed at Ames.

The National Safety Council presented Lockheed Martin ETSC with the Green Cross for Safety Excellence Achievement Award and the perfect record award. The Green Cross is awarded to companies with a 'days away' rate of at least 50 percent below the industry.

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Ask a librarian

The Ames library staff will be at the Ames Mega Bytes café on Tuesday, April 16, from 11 a.m. to 1 p.m. to celebrate International Special Librarians' Day. The staff will provide information about updates to the collection, and the library web page, located at: <http://library.arc.nasa.gov>.

Come by and enter to win a free subscription to Aviation Week & Space Technology. For more information, contact Jeanette Johnston at ext. 4-4051.

Ames occupational illness/injury data for February 2002

	Civil Servants	Contractors
Not recordable first aid cases	3	8
Recordable no lost time cases	0	0
Restricted workday cases	0	0
Lost workday cases	0	2

Data above are as of 3/14/02. May be subject to slight adjustment due to late reporting or new information in reclassification.

Ames engineers test antennas in hurricane-force winds

Ames engineers recently used wind tunnel tests to evaluate large emergency service radio antennas that someday may serve as a backup to communications that failed after the collapse of New York's World Trade Center last Sept. 11 following terrorist attacks. Many of the area's communications services used the Trade Center's high towers as a location for mounting antennas.

After receiving requests from a New York State senator and an assembly member, Ames officials agreed to test a number of antennas, ranging in length from 10 feet to 18 feet, in 200-mile-per-hour, hurricane-force winds in the center's 40-foot by 80-foot wind tunnel.

"The urgency for these tests at NASA Ames was that following the Twin Towers collapse on Sept. 11, all emergency communications in a large area of the state of New York were lost," said George Kidwell, director

of research and development services at Ames, which operates the center's wind tunnels. "These antennas may serve as an enhanced technology that might help avoid such large-scale, future shutdown of emergency radio communications."

To improve New York's communications systems, a number of antennas, similar to those that were tested, would be installed in various locations in the state. The antennas would provide a backup redundancy and would be robust enough to survive natural disasters. The system, to include a number of dispersed antennas, would be capable of operating even if a certain percentage of the antennas failed.

"In today's world, we can all appreciate the importance of our communications infrastructure and its effect on the safety of our people. I can think of no better way for the general public to utilize the technological

advances that your agency has achieved. On behalf of the people of New York, I thank you for your support," wrote New York assembly member Richard A. Smith in a letter requesting Ames' assistance in testing antennas from TX RX Systems, Inc., Angola, N.Y.

The two antennas, after being bolted to the floor of the 40-foot by 80-foot wind tunnel, were under evaluation by engineers to test structural integrity during hurricane-force winds. Tom Arledge of Code FOW served as the test manager for the antenna evaluation and development program.

"The 40-foot by 80-foot wind tunnel is uniquely suited to support this important test because the tunnel is big enough to contain an 18-foot antenna and also generate 200-mile-per-hour winds," said Pete Zell of Code FO. "Our goal is to make sure the antennas can operate during extremely high wind conditions."

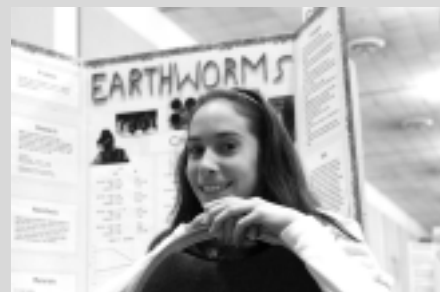
BY JOHN BLUCK 

Local students shine at 41st annual Santa Clara Valley science fair

On March 13, nearly a thousand students gathered at the San José Convention Center to exhibit their science fair projects and explain their work to the hundreds of judges and others interested in their work. A full spectrum of research areas was investigated at this, the nation's longest continuously running science fair.

Sixth graders explained the inner workings of homemade wind tunnels, middle

school students inoculated petri dishes, and high school students covered just about every subject under the sun. While their teachers waited nervously in the convention center lobby, the NASA Ames judging team, led by Paul Callahan of Code SLO, reviewed every project and awarded 15 NASA Certificates of Outstanding Achievement to the hardworking and deserving students.



photos by Tom Trower

Ames employees seen here judging some of the many science fair projects at the March 13 science fair held at the San José Convention Center. Left to right: Mariana Triviso (Code DXE); Paul Callahan (Code SLO); Del Philpot (foreground, retired), John Colombero (Code DXE) and Alan Federman (Code DX).

Safety is always mission one!

Nonionizing radiation is electromagnetic radiation in the form of microwaves, electric fields and laser light. While ionizing radiation can cause biological damage by removing electrons from atoms, nonionizing radiation causes damage mainly through heat generation. This can be observed in a microwave oven or a laser being used to cut metal. The Nonionizing Radiation Safety Committee has existed in one form or another since nonionizing radiation use began at Ames. Their mission is to ensure sources of nonionizing radiation are used safely at Ames.

J.T. Heineck is the committee chairperson and the other seven members of the team are comprised of researchers and safety personnel representing the varied uses of laser and microwave radiation at Ames. The foremost duty of the committee is to ensure that nonionizing radiation is used safely and productively. Heineck reminds the commit-

tee members that they are there to help researchers to conduct their projects safely, not to simply regulate them.

Researchers submit the nonionizing radiation projects to the committee for review. The experiments then are reviewed and sug-

gestions offered on the best way to use the radiation safely. Experienced researchers share their knowledge and expertise to enhance safety and allow new researchers to easily set up their laboratories without the need to 'reinvent the wheel.' Some of the recent projects the committee has reviewed are for laser operations in the martian surface wind tunnel (MARSWIT); the 7-foot by 10-

foot wind tunnel; the Arc Jet facility; and the fluid mechanics laboratory, as well as various microwave projects. A sampling of ongoing items the committee currently is reviewing is the center's laser tag-out program, laser inventory program, and the methods for donating used lasers to colleges and other learning institutions.

If you would like more information about the Nonionizing Radiation Safety Committee, visit its web site at: <http://q.arc.nasa.gov/qh/safetycom/nonionrad-safetycomm.php>. There you will find contact information, the committee's charter and minutes from its recent meetings. To learn more about nonionizing radiation, visit the health physics training site at: <http://q.arc.nasa.gov/qh/classes/physics/index.php>. There you will find information and training about lasers, microwaves and even laser pointers!



Safety Committee Spotlight

Nonionizing Radiation Safety Committee



Increasing security agency wide

One of the first things David Saleeba did after taking the helm as Assistant Administrator of the Office of Security Management and Safeguards (Code X) was to tour the headquarters building looking for weaknesses in security. A former Secret Service agent, Saleeba's investigative experience immediately led him to have the paper recycling boxes inspected. What he found was, in his mind, unbelievable. Personnel records, contracting information and other confidential documents were found in almost every receptacle.

This discovery reinforced to Saleeba the need for a comprehensive agency-wide operations security (OPSEC) program. The person Saleeba tasked to develop and coordinate this program for NASA is Ike Hendershot, director of special programs.

Hendershot, also a former Secret Service agent, said, "The ultimate goal of OPSEC is to deny an adversary critical organizational information that is not intended for disclosure. This does not mean that the OPSEC program would prevent the appropriate sharing of data, facts, knowledge, technology or scientific accomplishment. However, many agencies do not always realize how much critical information they are actually giving away by predictable behavior, casual conversation, routine messaging, internet exchange and refuse disposal. Careful attention must be applied to what is revealed. Failure to do so could provide adversaries with the information they need to compromise the agency for embarrassment, on the one hand, and to execute terrorist acts, on the other."

Hendershot said a viable and complete OPSEC program will increase operational

effectiveness and safeguard efficiency by preventing the inadvertent compromise of classified and/or unclassified but sensitive information concerning the agency's activities, capabilities, intentions and personnel.

According to Hendershot, OPSEC is a training and awareness program, not a fault-finding process. It does not replace other security disciplines, it supplements them. For an agency to operate successfully, employees must be aware of their daily activities,

and those of others that may reveal sensitive employee and agency information or classified activities. Ideally, a comprehensive NASA wide OPSEC program will help prevent or negate these vulnerabilities. The OPSEC program also can benefit NASA employees and their families. Employees can take the knowledge learned from the program and use it to protect themselves from identity theft and other forms of theft.

BY MICHAEL BRAUKUS, NASA HQs

Celebrating the Equinox



photo by Tom Trower

Students from Sandpiper Elementary School in Foster City, Branham High School in San José, and the Oakland American Indian Charter School participated in a two-hour celebration on March 20 for Sun-Earth Day. The event was carried on NASA TV and webcast on NASA QUEST. Together with astronomers from the Stanford Solar Center, the students showed graphs they had made plotting the sun's apparent motion from different latitudes. Nathan Chasing Horse introduced students to traditional Lakota knowledge of the sky that has been handed down for generations through songs, dances, ceremonies and traditional story telling. Thousands of students and teachers across the nation participated in the live event. For more information, see: quest.arc.nasa.gov

Ames' Hernandez receives presidential appointment

Mike Hernandez, the president and chief operating officer of Hernandez Engineering Inc., recently was appointed by President George W. Bush to serve on the Commission on Educational Excellence for Hispanic Americans.

The commission is chartered to create a multi-year plan to close the educational achievement gap between Hispanic-American students and their peers. Hernandez is one of 17 appointees who will advise the U.S. secretary of education on the progress of Hispanic-Americans in closing this gap and meeting the promise of the new No Child Left Behind Act of 2001. Members also will monitor federal progress and recommend ways that the government can assist Hispanic parents to proactively prepare their children to graduate from high school and pursue higher education opportunities.

The individuals chosen to serve on the president's commission represent a variety of backgrounds. It's no surprise why Hernandez was nominated for this position. His years of service in the aerospace industry, dedication and support of educational foundations and participation in the community demonstrate his outstanding character and values. His unique success story from Cuban immigrant to president and chief operating officer of a highly successful engineering firm

represents over 35 years of hard work, determination and a vision for success.

The White House quoted Secretary of



Mike Hernandez

Education Ron Paige, saying, "President Bush has selected an outstanding group of men and women to guide our efforts to close the

inexcusable achievement gap between Hispanic-American students and their peers. I look forward to working with them to help Hispanic students across the country reach high standards of achievement regardless of the language or other barriers to academic success that they may bring to the classroom. Every child in the country can succeed and, with the assistance and advice of this commission, I look forward to improving the academic performance and attainment of all our Hispanic students."

Hernandez attended the ratification ceremony in Washington D.C., on Feb. 26, and began work by attending the commission's first meeting on Feb. 27. Hernandez said, "It's very exciting to start Hernandez Engineering's 20th anniversary year with this appointment. The president's nomination is a great honor. I am very pleased to have the opportunity to make a difference for young Hispanic Americans."

Hernandez Engineering has supported Ames Research Center since 1995. Over 30 engineers and technical specialists provide system safety and mission assurance as well as ISO quality management support to all Ames payloads, flight research projects, operations and facilities.

Partners with NASA in safety

continued from page 7

try rate during the 12-month reporting period. The perfect record award is bestowed on organizations that achieve at least 12 consecutive months without a lost-time injury case. Lockheed Martin ETSC has gone over two years (over 1 million hours worked) without a lost-time injury.

Lockheed Martin fosters an environment where management and employees work together to solve problems. By doing so, they continuously seek to improve the way they do business. Lockheed Martin strives to make processes safer, more reliable and to increase the quality of research and products. Lockheed Martin is a strong supporter of OSHA's Voluntary Protection Program (VPP). To help Ames prepare to become VPP certified, the ETSC contract arranged for the Ames VPP committee to tour the Skunk Works in Southern California, one of their many VPP certified sites.

ETSC management works with employees to evaluate tasks and to make process improvements. A recent example of this is an employee and his manager, who together developed a new approach to eliminate a potential repetitive stress injury. A drop method was developed that eliminated an employee exposure problem. This technique was shared with and adopted by other organizations performing the same process.

In an effort to better protect laboratory researchers at Ames from toxic gasses, an innovative rodent induction chamber was designed by Lockheed Martin that is ex-

pected to eliminate a potential chemical exposure issue. Not only is this chamber safer, it also will decrease the cycle time, making the lab more productive.

All new employees receive in-house Lockheed Martin environmental, safety and health (ESH) training. Refresher training also is provided and all training is tracked electronically. Both employees and management participate in ESH self-inspections that occur monthly in each laboratory and shop,

while office inspections are conducted quarterly on the recently developed Web-based inspection system.

Lockheed Martin ETSC's beliefs align with VPP values. To achieve a safe workplace, it takes a commitment by everyone involved. Each employee understands the importance of implementing 'best work practices' and continuously works to control all hazards. Safety works best when it is a team effort.

Ames veteran conducts 'research at the crossroads'

continued from page 2

Freund said. "The best way is to try to understand the underlying physics."

Following his own intellectual curiosity once again will take Freund across disciplines. Coincidentally, the same solid state reaction that produces the dormant electric charges of interest to seismologists, also produces hydrogen gas within rocks. Freund's recent work, to appear in the spring issue of the journal 'Astrobiology,' deals with what he describes as a "nearly inexhaustible supply" of hydrogen within rocks. "Primitive bacteria that are believed to exist in large numbers within the Earth can live off this hydrogen," said Freund. "Similar hydrogen-consuming microbes may some day be found on Mars where the geological conditions

should also lead to hydrogen inside the rocks."

Moving across disciplines, Freund maintains his focus and inexhaustible optimism and energy. "Science can be wonderful, exhilarating and exhausting," he says. "You can run with the crowd and be satisfied. If you savor risk and are willing to commit, however, go for what lies between the established fields." Judging from his unfettered commitment to his work, Freund is living proof that deep conviction, when coupled with imagination and perseverance, is a recipe for success.

BY ELENA KOZAK ▲

Event Calendar

Model HO/Hon3 Railroad Train Club at Moffett Field in Bldg. 126, across from the south end of Hangar One. Work nights are usually Friday nights, 7:30 p.m. to 9:30 p.m. Play time is Sundays, 2 p.m. to 4 p.m. Call John Donovan (408) 735-4954 (W) or (408) 281-2899 (H).

Jetstream Toastmasters, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Cathy Payne at ext. 4-0003.

Ames Ballroom Dance Club. Classes meet Tuesdays. Mar. 19 and 26, waltz. Begin classes start at 6:15 p.m. Higher-level class meets at 5:15 p.m. Held in Bldg. 944, the Recreation Center. POC: Helen Hwang, hwang@dm1.arc.nasa.gov.

Ames Bowling League, Palo Alto Bowl on Tues. nights. Seeking full-time bowlers and substitutes. Pre-league meeting at Palo Alto Bowl on Tues, August 28 at 6 p.m. Questions to sign up: Mike Liu at ext. 4-1132.

Ames Diabetics (AAD), 1st & 3rd Weds, 12 noon to 1 p.m., at Ames Mega Bites, Sun rm. Support group discusses news affecting diabetics. POC: Bob Mohlenhoff, ext. 4-2523/email at: bmohlenhoff@mail.arc.nasa.gov.

Ames Child Care Center Board of Directors Mtg, Every other Thursday (check web site for meeting dates: <http://acc.arc.nasa.gov>), 12 noon to 2 p.m., N-269, Rm. 201. POC: Joan Walton, ext 4-2005.

Nat'l Association of Retired Federal Employees, (NARFE), first Friday of each month, S. J. Chptr #50 mtg, 9:30 a.m., Hometown Buffet, Westgate Mall, 4735 Hamilton Avenue., San José. Program at 10 a.m. "Guide Dogs for the Blind." Lunch at 11 a.m. \$6.27 pp. POC: Earl Keener (408) 241-4459 or NARFE 1-800-627-3394.

Ames Federal Employees Union (AFEU) Mtg, Apr. 17, 12 p.m. to 1 p.m., Bldg. 19, Rm 1042. Info at: <http://www.afeu.org>. POC: Marianne Mosher at ext. 4-4055.

Ames Amateur Radio Club, Apr. 18, 12 noon, N-228 (across from N-255). POC: Michael Wright, KG6BFBK, at ext. 4-6262. URL: <http://hamradio.arc.nasa.gov>.

Native American Advisory Committee Mtg, Apr. 23, 12 noon to 1 p.m., Building 19, Rm 1096. POC: Mike Liu at ext. 4-1132.

Ames Contractor Council Mtg, May 1, 11 a.m., N-200, Comm. Rm. POC: Paul Chaplin at ext. 4-3262.

Environmental, Health and Safety Information Forum, May 2, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm 1040. URL: <http://q.arc.nasa.gov/qe/events/EHSseries/> POC: Julie Quanz at ext. 4-6810.

Ames Classifieds

Ads for the next issue should be sent to astrogram@mail.arc.nasa.gov by the first Friday following publication of the present issue and must be resubmitted for each issue. Ads must involve personal needs or items; (no commercial/third-party ads) and will run on a space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost and found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads.

Housing

Roommate wanted (N/S, prof) to share a great, sunny, 2 mstr bd/2 ba end-unit condo (Sunnyvale) with gar, W/D, large rooms, storage, central air, low utilities, jac, great pool, balcony, 3 mls from Ames, \$900 plus 1/2 util's (potential to reduce rent with lease). Alan (408) 830-0755 (H); cell: (408) 348-3564.

Bayshore Park, large bathroom, separate kitchen area, one parking stall, laundry on site. \$850 mo plus deposit. \$50 off 1st mo. rent. Call (650) 965-0775.

Visitors! Temporary rental available for 3 to 8 months between May and December 2002. 3 bd/1 ba home in Cupertino, DW, W/D, hot tub & pool table. Furnishings optional. 12-20 min commute to Ames. \$1,950/mo. Laura (408) 343-1272.

Santa Clara duplex, 10 mls from Ames. 3bd/2ba, w/d hook-ups, 2 car garage, central heat/ac, hardwood/carpet floors, backyard, refrigerator and basic cable incl. Available now, approx. \$2,100/month plus deposit (negotiable based on lease). Call (408) 246-5295.

Room with large closet in 4 bd/2 ba home excellent, quiet Mtn. View area close to Ames. Washer, dryer, microwave, fireplace, PG&E block 50. Tidy person & nonsmoker. Easy access to Ames, 85, 237, & 101. \$475 + share utilities. Avail. 4/1. Call (650) 964-1900.

Roommate needed to share 2 bd/2ba apartment in Sunnyvale. \$825 mo. plus \$250 dep. Great Location, Non-smoker, no pets. Very clean and quiet. Call (408) 736-9929 or (408) 515-1527 (Cell VM)

Miscellaneous

Elena Jubilee electronic 500 sewing machine. Includes maple cabinet and attachments. New condition. \$300. Call (408) 745-1734.

Everlast 80lb vinyl canvas punching bag w/rafter hanging bracket, \$35. Call (650) 938-6546.

Credenza/hutch, 20in x 30in x 46in, beautiful honey-lacquered finish, mint condition, only a year old, \$400. Call (650) 473-0604.

Multisport home gym equipment with dual weight stack. Stations include a press, pec deck, leg press, high pulley, low pulley and a removable bench. \$450. Call evenings (650) 274-3133 or (650) 654-9237.

Wanted: Used stationary bike, Nicole (408) 229-2878.

Sailboat 1/4 partnership. 25' Pacific Seacraft in Fort Mason marina (San Francisco). 4K or B/O. Email silvanopc@yahoo.com or call (415) 826-3041.

Ames Retirements

Name	Code	Date
Michael J. McIntyre	JFP	3-03-02

Igloo dog house for large dog. Free. Rick (510) 796-3217.

Leather couch & love seat. Light grey. Great condition. \$500. Shirley (408) 777-0277.

Who has a Post or K&E slide rule for sale? Call (650) 473-0604.

Stair stepper machine, \$60. Everlast punching bag, \$30. Email: falcon7777@earthlink.net for photos and more information.

Transportation

'83 Toyota Cressida, excellent condition, white, good tires, A/C, PS, power windows and door locks, cruise, AM/FM stereo, 78K mls, one owner. Asking blue book \$2,500 or B/O. Frank (408) 248-7164 anytime.

'87 Ford Escort Pony, hatchback, automatic, new tires, good condition. \$1,100 or B/O. Call (650) 625-1325.

Mini motor-home, self-contained. 104K mls on '87 Ford Econoline engine. \$9,900 or B.O. Email silvanopc@yahoo.com or call (415) 826-3041.

'87 Toyota Corolla, \$1,900 only. Very good condition. Head and valves job performed last year. Vee (408) 923-5138.

'88 Blazer, 4-Cyl. 2.5 Ltr, 5 Speed. Black, 2 door, Could use some work. \$800 or B/O. Call (650) 343-4047.

'90 Subaru Legacy, white, 4 door, 4 WD, 5-speed transmission. Good tires, new battery, 72,000 mls, \$950. Call (408) 872-1887, ask for Kevin.

'91 Ford Explorer XLT 4X4, 4.0L V6, AT, PW, PL, CD, front bench 6-passenger, roof rack, tow pkg, new brakes & tires, recent engine work, overall very good condition at 111K mls. \$4,550. Tom (408) 255-2325.

'91 Chrysler, white, model fully automatic with 59,000 mls in good condition. Asking price \$6,000. Willing to negotiate. Jenette (408) 745-1583.

'92 Nissan 240SX Fastback, 45K mls, Palomino, super clean, single owner. Manual 5-spd, power everything, A/C, flip-up roof, good rubber. \$5,500. Call (650) 323-1670 eves.

'93 Toyota Camry. Runs great. Clean inside and out. Always dealer serviced. 4-cyl Auto, A/C, AM/FM radio, moonroof, 105K mls. \$5,500. Call (415) 577-6659.

'95 Saturn SL-2, 5sp, 54K, PW, PL, AC, sun roof, AM/FM cass, dealer maint, very good, Ask \$5,000. Elani (650) 948-1527.

'98 Ford Ranger XLT, ext cab, automatic, V6 3.0, AC, Vista camper shell, carpet kit, AM/FM stereo, cassette, 25K miles, \$10,500 or B/O. Deanna (408) 260-1180 between 5-9 p.m.

'02 Yamaha TTR-125. Ridden for approx. 12 hours. Great dirt bike for kid just getting started. Call (408) 248-5753.

Ames Public Radio

1700 KHz AM radio -- information announcements and emergency instructions, when appropriate, for Ames employees. The emergency information phone number for Ames is (650) 604-9999.

Exchange Information

Information about products, services and opportunities provided to the employee and contractor community by the Ames Exchange Council. Visit the web site at: <http://exchange.arc.nasa.gov>

Beyond Galileo N-235 (8 a.m. to 2 p.m.)
ext. 4-6873

Ask about NASA customized gifts for special occasions. Make your reservations for Chase Park.

Mega Bites N-235 (6 a.m. to 2 p.m.)
ext. 4-5969

See daily menu at: <http://exchange.arc.nasa.gov>

Visitor Center Gift Shop N-223
(10 a.m. to 4:00 p.m.) ext. 4-5412

NASA logo merchandise, souvenirs, toys, gifts and educational items.

Tickets, etc...(N-235, 8 a.m. to 2 p.m.)
ext. 4-6873

Check web site for discounts to local attractions, <http://exchange.arc.nasa.gov> and click on tickets. Jun. 1, 8 p.m., Damn Yankees, San José Center for the Performing Arts

NASA Lodge (N-19) 603-7100

Open 7 days a week, 7:00 a.m. to 10 p.m. Rates from \$40 - \$50.

Vacation Opportunities

Lake Tahoe-Squaw Valley townhs, 3 bd/2ba, view of slopes, close to lifts. Wkend \$500, midwk \$190 nite. Included lines, cleaning, propane fireplace, fully furnished. Call (650) 968-4155. DBMcKellar@aol.com

South Lake Tahoe Cottage w/wood fireplace and hot tub. Rates from \$50 to \$130 per night. Call (650) 967-7659 or (650) 704-7732.

Vacation rental, Bass Lake CA 14 mls south of Yosemite. 3bd/1.5 ba, TV, VCR, MW, frplc, BBQ, priv. boat dock. Sleeps 8. \$1,050/wk. Call (559) 642-3600 or (650) 390-9668.

Big Sur vacation rental, secluded 4bd/2ba house in lovely canyon setting. Fully eqpd kitchen. Access to priv. beach. Tub in patio gdn. Halfway between Carmel & Big Sur. \$175/night for 2; \$225 for 4 and \$250 for more, plus \$150 cleaning dep. Call (650) 328-4427.

Incline Village: Forest Pines, Lake Tahoe condo, 3 bd/2 ba, sleeps 8. Fireplc, TV/VCR, MW, W/D, jacuzzi, sauna, pool. \$120/night low season; \$155/night high season. \$90 cleaning fee and 12% Nevada room tax. Charlie (650) 366-1873.

New PDM system at Ames

This summer, NASA is introducing a new automated Position Description Management (PDM) system that streamlines the

currently takes to create an employee position description (PD) will be dramatically reduced. This enabling technology also will allow employee access to archived agency PD files.

NASA contracted with Avue Technologies for the Avue Digital Services (ADS) Classification Module. To prepare for implementation of this Web-based system, a group of subject matter experts (SMEs) was invited to test and review the content and ease of application. Subject matter experts (SMEs), including Dan Bencze (Code AP) and Nelson Hsu (Code FEF) were two of the SME's chosen to evaluate ADS. This review by SMEs will ensure that the system provides mean-

Subject matter experts Dan Bencze (right) and Nelson Hsu (left) test the new automated position classification system from Avue Technologies as PDM project lead Camilla Perez (center) looks on. Ames employees have been assisting human resources personnel in evaluating the new system.

photo by Tom Trower

classification process and enables supervisors, managers and human resources (HR) staff to create position descriptions easily and quickly. Position Description Management (PDM), a pathfinder project managed by the Integrated Financial Management (IFM) Program Office, is directly linked to promoting the 'One NASA' concept as a standard way of doing business.

What this means for supervisors, managers and HR staff is that the amount of time it

ingful, appropriate classification information for describing work conducted here at Ames and NASA-wide.

Content testing and review will continue until April 5. Camilla Perez and Catherine Poon are part of the project team working to bring ADS onsite. If you would like more information, contact Camilla at: cperez@mail.arc.nasa.gov or Catherine at: cpoon@mail.arc.nasa.gov.

Sustainability and security lecture set

The Environmental Services Office Code QE, will sponsor a sustainability and security seminar on Wednesday, April 17, at 12:00 to 1:30 p.m. in the N-201 Auditorium.

This talk is about the links between ecological sustainability and security. In order to fight terrorism effectively, we need to understand its root causes, the conditions that breed hatred and violence. Only changing these conditions will make us more secure in the long run.

Fritjof Capra, Ph.D., physicist and systems theorist, is a founding director of the Center for Ecoliteracy, which is dedicated to promoting ecology and systems thinking in primary and secondary education. Capra is the author of several international bestsellers, including *The Tao of Physics*, *The Turning Point*, and *The Web of Life*. This talk is based on his forthcoming book, *The Hidden Connections: A Science for Sustainable Living*.

For more information, contact Julie Quanz at ext. 4-6810 or email her at: jquanz@mail.arc.nasa.gov

Astrogram deadlines

All Ames employees are invited to submit articles relating to Ames projects and activities for publication. When submitting stories or ads for , submit your material, along with any questions, in MS word by e-mail to: astrogram@mail.arc.nasa.gov on or before the deadline.

<i>Deadline:</i>	<i>Publication:</i>
April 29, '02	May '02
May 29, '02	June '02



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